Audit of CT Colonography Outcomes

Audit Title: Audit of CT Colonography Outcomes

Descriptor: The sensitivity and specificity of CT Colonography (CTC)

Background:
CT Colonography is the accepted best radiological means of identifying colorectal cancer and advanced colonic polyps. It is the alternative imaging investigation of choice for the NHS Bowel Cancer Screening Programme (NHSBCSP) when colonoscopy is incomplete (approximately 5% of colonoscopies) or the patient is considered unsuitable for colonoscopy. National and International CT Colonography standards have been agreed and published for symptomatic patients and in the context of the NHS Bowel Cancer Screening Programme (NHSBCSP) (Ref 1,2,3). The SIGGAR trial highlighted the relatively high proportion of referrals to colonoscopy from CTC where no subsequent significant polyp or cancer was identified (in the CTC vs. colonoscopy trial, 30% had further testing, but only 11% had a cancer or large polyp). It is therefore essential to have in place mechanisms for ensuring that CTC is performed to an appropriate standard.

THE CYCLE:

THE STANDARD:

CTC should demonstrate a greater than 75% sensitivity and greater than 95% specificity for detecting polyps greater than 1cm in size [2,3]. Outside of the context of a clinical trial, and during routine normal working practice within a teaching hospital, a sensitivity of 89% and specificity of 94% has been reported for polyps larger than 5mm in size [4].

TARGET:

>75% sensitivity and > 95% specificity for detecting polyps greater than 1cm in size [2,3].

ASSESS LOCAL PRACTICE:

The indicator

- The number of negative CTC examinations that did not have a lesion identified at subsequent colonoscopy (specificity)
- The number of positive CTC examinations that were subsequently found at colonoscopy to be positive for disease (sensitivity)
Data items to be collected
- The number of patients with positive CTC findings (e.g. polyp or tumour)
  The number of these patients that have had subsequent positive histological confirmation
- The number of patients with negative CTC findings that have subsequently been found to have a polyp or tumour by alternative diagnostic means (e.g. colonoscopy or cross sectional imaging)

Suggested number
- Retrospective patient data for the proceeding 1-2 years for all patients who have undergone both CTC and subsequent endoscopy +/- biopsy, or 50 consecutive patients (whichever is greater).
- Screening Radiologists (designated reporters for the NHS Bowel Cancer Screening Programme) should audit individual outcomes for at least 100 consecutive CTC cases per annum.

SUGGESTIONS FOR CHANGE IF TARGET NOT MET:

Present results at audit meeting, ensure standards meet those set by The International CT Colonography Standards Collaboration, and ESGAR [1,5]

Bowel Preparation:

1. Oral tagging agents should be considered in patients undergoing colorectal cancer screening with CTC
2. Symptomatic patients should receive full bowel purgation (if tolerated)

On the Scanner Table:

3. Spasmolytics such as Buscopan should be routinely used (Glucagon not recommended).
4. Automated colonic distension with carbon dioxide is preferred
5. Supine and prone imaging should be routine unless prevented by patient's condition.
6. IV contrast medium should be routinely administered to symptomatic patients, but not to asymptomatic patients.

Image interpretation:

7. Datasets be should be analysed by a combination of 2D axial images, 2D MPRs and 3D rendering
8. Only experienced readers who have undergone approved training should be employed.
9. Consider double reading.
RESOURCES:

• CTC patient database generated from the appropriate RIS service
• Radiologist: 6-12 hours to undertake for 50 CTC cases
• Correlation with the relevant CTC reports
• Correlation with available histological reports
• Correlation with any subsequent colonoscopy or cross sectional imaging reports

REFERENCES:


4) Grant LA, Griffin N, Shaw AS. Two year audit of computed tomographic colonography in a teaching hospital: are we meeting the standard? Colorectal Dis 2009 Mar 5 [Epub ahead of print].